Indian J. Phys. 77B (1), 9-10 (2003)

INDIAN JOURNAL of PHYSICS

# FROM THE GUEST EDITOR

The beauty of the seminal discovery on light scattering made by Professor C V Raman in 1928 lies in its simplicity and wide applicability in getting insight of molecular structure and inter-atomic forces. The momentousness of latter aspect realised over a period of 75 years is such that nearly all branches of science use this simple technique today. Hundreds of papers published in different facets of this phenomenon within a decade of the discovery vindicated the belief of Raman about the universality of this effect. Many new directions for Raman Spectroscopy continue to emerge as science advances in interdisciplinary areas embodying physics, chemistry, biology, polymer science, astrophysics *etc*. With the advent of laser source and phenomenal progress in technology of detecting devices the list continues to grow with time.

A memorable event for Indian Journal of Physics, the oldest and the prestigious research journal, is that it was established by Professor C V Raman in 1926 and the journal is being published uninterruptedly since its inception. The profound involvement of Professor Raman with Indian Journal of Physics is clearly reflected in his publications in this journal and especially the article related to famous Raman effect, which was published in the second volume of this journal. February 28th of this year happens to be the 75th year of discovery of Raman effect. To commemorate this historic event in a befitting manner the Board of Editors of Indian Journal of Physics rightly took the decision to bring out a special issue of the Journal containing review articles and some of the current research activities in the vast domain of Raman spectroscopy and allied topics.

First part of this issue is devoted to the reproduction of the first announcement of the discovery of "New Radiation" in Indian Journal of Physics and a biography of Professor Raman reprinted from the Biographical Memoirs of Fellows of The Royal Society with their kind permission. The second part encompasses a few contributed articles by renowned experts in different areas of Raman Spectroscopy. K Kneipp *et al* take us to the exotic area of single molecule Raman spectroscopy using silver and gold nanoparticles. The article by J R Durig and and Chao Zheng discuss Raman and infrared spectra and structural parameters of organo-amines and hydrazines by *ab initio* method. A Otto delineates the hot topic of electronic contribution to single molecule SERS. M S Dresselhaus *et al* describe the Resonance Raman Scattering in one dimensional systems. M Schmidt *et al* review the exotic femtosecond time-resolved coherent Raman Spectroscopy in probing molecular dynamics. J K Wahlstrand and R Merlin discuss the impulsive stimulated Raman scattering by phonon polaritons and Cherenkov effect on the interpretation of transient grating experiment. V B Kartha *et al* review the application of normal, micro and SERS Raman spectroscopy in biomedical applications especially as diagnostic tool for oral malignancy. D N Bose and A K Bandopadhyay discuss the characterisation of semiconductor materials by Raman

spectroscopy with reference to evaluation of InGaAs/InP quantum wells. K Bhattacharya deals with the dynamics of organic systems in biological and self-organised assemblies.

All these articles have been invited from celebrated research scientists in the field of Raman spectroscopy from all over the world and this Special issue is expected to have a wide circulation in India and abroad. My humble duty as the guest editor was to cater the delicacies prepared by the experts on the platter of learned readers. On behalf of the Board of Editors, I express my sincere thanks and gratitude to all the contributors from India and abroad, the Royal Society of London, the Director, Indian Association for the Cultivation of Science and the local members of the committee assisting me, for their fullest cooperation to have it published in a befitting manner. In spite of our best efforts to ensure accuracy in presentation, some errors may have unwittingly crept in various stages of editing and proof reading. I wish I were gifted with greater vision and ability so that I could have done this work better than what is presented here. I am indebted to Prof. S P Sen Gupta, Editor-in-chief, Dr. (Mrs.) K K Datta, Associate Editor and Mr. A N Ghatak, Staff Editor of Indian Journal of Physics for their untiring efforts and their cooperation to get the issue published as per schedule.

( **Professor S Chakravorti** )
*Department of Spectroscopy,*
*Indian Association for the Cultivation of Science,*
*Jadavpur, Kolkata-700 032*